REMARKS

I. Introduction

Claims 1-6 are currently pending in this application. Claims 1-6 have been amended to further define the subject matter, support for which is found, throughout the specification, for instance in Example 1 on page 26, lines 6-13. No new matter has been added.

Claims 1-6 were been rejected under 35 U.S.C. § 112, second paragraph for allegedly being indefinite for failing to point out and distinctly claim the subject matter regarded as the invention. Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as were claims 3-6.

For the following reasons, Applicants respectfully submit that the claims are in condition for allowance and request the application be passed to issue.

II. Claim Rejections Under 35 U.S.C. § 112, second paragraph

Claims 1-6 were rejected under 35 U.S.C. § 112, second paragraph for allegedly being indefinite for failing to point out and distinctly claim the subject matter regarded as the invention. Specifically, the Examiner alleges that the recited element "the ratio of H/W of a height H of said peak P to said half-width W is 10,000 or more," in claim 1 is indefinite because the ratio of H/W is arbitrary. The Examiner asserts that the width (W) depends on the method of preparing the sample, and that because the specification allegedly does not provide further details of the method of preparation, (further to the disclosure of the use of the RINT 1400 diffractometer), that the claims are indefinite.

Applicants respectfully submit, that the claims are definite as the basis for the "H/W" ratio is based on the disclosure on page 17, lines 3-24, which provides the parameters used to obtain the values for "H" and "W." The "H/W" ratio set forth in claim 1 is uniquely determined

by the measurement conditions disclosed on page 17, lines 3-24 of the specification, copied below:

> [Measuring device] Powder X-ray diffractometer "RINT 1400", available from Rigaku Corporation
> [Anticathode] Cu
> [Filter] Ni
> [Tube voltage] 40 kV
> [Tube current] 100 mA
> [Sampling angle] 0.02°
> [Scanning speed] 3.0°/minute
> [Divergency slit] 1/2°
> [Scattering slit] 1/2°
> The diffraction peak derived from the (001) plane of the nickel hydroxide solid solution particles obtained was observed around $2\theta = 19°$. The half-width of this diffraction peak was 0.55°, and the peak height thereof was 5,800 cps under the above-mentioned measurement conditions. Also, the ratio of the peak height to the half-width, which serves as a measure of the degree of crystallinity, ([peak height]/[half-width]), was 10,540.

As such, the specification does provide sufficient details on the method of preparing the sample, and therefore claims 1-6 are definite.

Accordingly, Applicants respectfully request that the rejection by withdrawn.

II. Claim Rejections Under 35 U.S.C. under 35 U.S.C. § 103(a)

A. Sei in view of Dansui

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sei et al., JP 10-270042 ("Sei) in view of Dansui et al US Patent No. 6,074,785 ("Dansui"). Applicants respectfully disagree. However, in an effort to expedite prosecution, claims 1-6 have been amended to further define the subject matter of the claims.

Specifically, as amended, claims 1-6 now recite, an "alkaline primary battery." As discussed above in the introduction section of this paper, support for the above amendment is found throughout the specification, for instance at page 26, lines 6-13. At page 26, lines 6-13, the specification describes the Evaluation of Example 1, "[t]he alkaline batteries produced were

continuously discharged at a constant power of 1W at 20°C. At this time, the discharge duration until the battery voltage reached a cut-off voltage of 0.9 V was measured." Thus, the instant disclosure of the evaluation of Example 1, explains that only a discharge was performed and no charge was performed. Therefore it is clear that the batteries produced in Example 1 of the present disclosure are **primary batteries**, as it is well known to a person having ordinary skill in the art that batteries that only discharge and are not charged are defined as primary batteries.

In order to establish a prima facie obviousness rejection under 35 U.S.C. § 103(a), basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must not be based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Further, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." In re Kahn, 441 F. 3d 977, 988 (Fed. Cir. 2006). At a minimum, the cited prior art does not disclose (expressly or inherently)

The present subject matter is directed to alkaline **primary batteries** including nickel oxyhydroxide and having the physical values as recited in claim 1.

On the other hand, Sei and Dansui each pertain to an alkaline storage battery, i.e., an alkaline ***secondary*** battery. Specifically, these references improve positive electrode active materials used in alkaline secondary batteries.

Sei discloses at paragraph [0011] a method, which increases "the excess voltage of oxygen evolution with an additive agent, raises the charging efficiency to the nickel oxyhydroxide of nickel hydroxide." As such, Sei discloses a method, which pertains to secondary batteries not primary batteries, as recited in instant claims 1-6.

Furthermore, Sei specifies the crystallinity of nickel hydroxide. However, the crystallinity of nickel hydroxide, which is used as a raw material in Sei, is not reflected in the crystallinity of the resulting nickel oxyhydroxide, as explained in the present specification on page 17, line 17 to page 23, line 17 and Table 2.

For example, on page 20, lines 12 to 19 of the present specification, it is explained that,

> "it is known that in an x-ray diffraction profile of β-type nickel hydroxide, the diffraction peak derived from the crystal faces related to the periodic arrangement of ions in the direction of the "a" axis (the (100) plane and the (101) plane) appears in a region of 2θ = 30 to 40". However, this peak becomes broad when nickel hydroxide is oxidized. In the diffraction profile of Fig. 2, this peak could not be identified clearly."

Furthermore, page 21, lines 1 to 4 of the present specification, explains, "[t]he difference in oxidation conditions caused a change in the half-width of the diffraction peak derived from the (001) plane of the nickel oxyhydroxide and the peak height thereof." (see FIG. 2).

In addition, page 23, lines 9-17 of the present specification states:

> "[i]n the chemical oxidation of nickel hydroxide by an oxidant, the crystallites of nickel hydroxide are destroyed or become finer at an early stage of the process of pulling out protons and electrons from the nickel hydroxide. When the chemical oxidation of nickel proceeds to an extent that the mean valence of nickel is around trivalence, the nickel re-aligns in the direction of the "c" axis of the crystals of nickel oxyhydroxide. This suggests an improvement in the crystallinity of the nickel oxyhydroxide."

As described above, the diffraction peak appearing in raw material nickel **hydroxide** cannot be clearly identified in nickel **oxyhydroxide** as recited in claim 1. Further, in the process of oxidizing nickel hydroxide, the crystallites of the nickel hydroxide are destroyed or become

finer in an early stage of the oxidation. When the mean valence of nickel becomes close to trivalence, the nickel re-aligns in the direction of the "c" axis of the crystals of nickel oxyhydroxide, and the crystallinity of the nickel oxyhydroxide improves.

Therefore, it is unreasonable to believe that the crystallinity of raw material nickel **hydroxide** is reflected in the crystallinity of the resulting nickel **oxyhydroxide**.

Further, the present subject matter relates to an alkaline primary battery, as described above. That is, the present subject matter optimizes the crystallinity of nickel oxyhydroxide used as a positive electrode active material in order to obtain an alkaline primary battery having excellent heavy-load discharge performance and improved energy density.

In contrast, Sei intends to provide a nickel electrode active material for an alkaline storage battery having high energy density and long life, which can be used in a wide temperature range.

Moreover, the Examiner concedes that Sei fails to disclose the mean valcency of nickel as being 2.95 or more, as recited in claim 1, and therefore relies on Dansui for this alleged disclosure. However, Dansui fails to cure the deficiencies of Sei because Dansui neither teaches a primary battery nor a "spherical nickel oxyhydroxide comprising a crystal of a β-type structure," as recited in claim 1.

In contrast to the subject matter recited in instant claim 1, Dansui aims to provide a nickel metal-hydrate storage battery including improved nickel hydroxide, the energy density of which is increased. That is, Sei and Dansui each have completely different objectives as compared to the subject matter of claim 1.

Furthermore, neither Sei nor Dansui disclose or suggest setting the physical values of nickel oxyhydroxide to those recited in claim 1 of the present application in order to improve both heavy-load discharge performance and energy density of an alkaline **primary battery**.

That is, one with ordinary skill in the art would have no motivation for setting the physical values of nickel oxyhydroxide to those recited in claim 1 in order to improve both heavy-load discharge performance and energy density of an alkaline primary battery.

Therefore, one with ordinary skill in the art would not arrive at the present subject matter recited in claim 1, from the disclosures of Sei and Dansui.

B. Sei in view of Dansui and further in view of Hideo EP 0831542

Claims 3-6 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sei in view of Dansui and further in view of Hideo EP 0831542 "Hideo". Applicants respectfully disagree.

The Examiner concedes on page 11 that neither Sei nor Dansui suggest that spherical nickel oxhyhydroxide carries a cobalt oxide and the cobalt contained in the cobalt oxide has a mean valence greater than 3, and wherein the cobalt oxide is in the amount of 0.5-15 parts by weight per 100 parts of weight of the spherical nickel oxyhydroxide, and therefore relies on Hideo for teaching a "lithium secondary battery". Office Action dated July 25, 2008 at page 11, paragraph 7.

As discussed above, as amended, claims 1-6 each recite **primary** batteries. At a minimum, neither Sei nor Dansui teach primary batteries of the configuration recited in claim 1.

Furthermore, as noted by the Examiner, Hideo teaches a **secondary** battery, and therefore fails to cure the deficiencies of Sei and Dansui, and also fails to teach or suggest the specific characteristics of the alkaline primary battery as recited in claim 1.

Therefore, neither Sei, Dansui nor Hideo, either alone nor in combination teach or suggest all of the elements of claim 1.

Accordingly, claim 1 is allowable over the cited prior art references.

Furthermore, claims 2-6 are also allowable because they depend from and further define the subject matter of allowable claim 1.

IV. Conclusion

In view of the above remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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